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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/666,438

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Phil Van Dyke

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03/13/2006

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EXAMINER

NGUYEN, HAU H

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/666,438	Applicant(s) VAN DYKE ET AL.	
	Examiner Hau H. Nguyen	Art Unit 2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
3. Claims 1-12, 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Hu (U.S. Patent No. 6,757,429).

Referring to claims 1-2, 5-7, 9-10, 24-26, Hu teaches a method of compressing digital representations of images, wherein

receiving video display data into a resizer, the video display data having a color format associated with a first sub-sampling scheme (sub-sampling in 4:2:2 format), adjusting a size associated with the video display data through the resizer (scaling down by a factor of L horizontally and vertically); compressing the size adjusted video display data through a second sub-sampling scheme (sub-sampling in 4:2:0 format) (col. 8, lines 54-61); and storing the compressed data having the color format (col. 4, lines 46-49). Hu further teaches the method can be implemented in an integrated circuit (VLSI chip) (col. 4, lines 35-38).

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In regard to claims 3 and 11, as cited above, Hu teaches converting the compressed data to a different format (4:2:2 to 4:2:0) and stored the different color format as cited above.

In regard to claims 4, 8, and 12, Hu teaches accessing the stored compressed data, and converting a frame of the stored compressed data through a lossy compression scheme, and the lossy compression scheme is a JPEG compression scheme (col. 10, lines 25-32).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu (U.S. Patent No. 6,757,429).

In regard to claim 28, although Hu does not teach the integrated circuit is included within a display controller, it would have been obvious to one skilled in the art to utilize the integrated circuit as taught by Hu incorporated into a display controller in order to store compressed image data and retrieve compressed data for display.

6. Claims 13-17, 19, 21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu (U.S. Patent No. 6,757,429) in view of Jiang (U.S. Patent No. 6,297,801).

Referring to claims 13, 19, and 27, as cited above, Hu teaches a resizer block configured to receive digital video data defined through a YUV color format, the resizer block capable of

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scaling and cropping the digital video data to define size adjusted digital video data; a conversion module configured to compress the size adjusted digital video data defined through the YUV color format from the resizer; a memory region configured to store the compressed size adjusted digital video data. Hu further teaches the methods can be implemented in software running on a general purpose computer processing unit (CPU) or a digital signal processor (DSP), in hardware, for example a VLSI chip, or in a combination of hardware and software.

Thus, Hu teaches all the limitations of claim 13, except for a color space conversion block configured to convert the compressed digital video data from the YUV color format to an RGB color format for display.

However, converting digital video data from YUV format to an RGB format for display is well known in the art as described in Jiang '801. As shown in Fig. 1, Jiang teaches converting a compressed YUV format graphic file to a displayed image. A compressed file 14 is expanded yielding a decompressed file 16, although still in a luma/chroma format, such as YUV. The expanded YUV format is converted to a RGB format 18 for displaying the graphic image 20 (col. 2, lines 10-17).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Jiang in combination with the method as taught by Hu in order to expand and display the compressed video data (col. 2, lines 30-35).

In regard to claim 14, as cited above, Hu teaches a JPEG block to encode the digital video data and the compressed video data.

In regard to claims 15-17, 21, as cited above, Hu teaches receiving video data in 4:2:2 format and compressing the video data to 4:2:0 format (thus, including a conversion module),

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and also teaches applying a scale factor and offset factor (a relative pixel position in the image tile) prior to applying a transform matrix to the compressed video data.

7. Claims 20, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu (U.S. Patent No. 6,757,429) in view of Tamura et al. (U.S. Patent Application No. 2002/0057265).

Referring to claims 20, 22-23, as applied to claim 19, Hu teaches all the limitations of claims 20, 22-23, except for the digital video device is selected from the group of cellular phone, a camcorder, and a personal digital assistant (PDA); a color space conversion to convert video data from YUV to RGB for display; and the display controller is an LCD controller, and display panel is an LCD display.

However, as shown in Fig. 1, Tamura et al. teach a display driver IC 100 (display controller) with a built-in RAM in this embodiment includes a display data RAM 102 which stores display data for at least one frame, and an MPEG decoder circuit 106 which decompresses compressed data input through an input terminal 104 from outside the IC. The display driver IC 100 with a built-in RAM is controlled by an LCD timing control circuit 108 (page 5, paragraph [108]). The driver IC is associated with an LCD display panel 110. The display data decompressed by the MPEG decoder circuit 106 is converted into RGB format from YUV format by an RGB conversion circuit 118. The display data in RGB format is written into the storage region of the display data RAM 102 corresponding to the display region on a cycle equivalent to the cycle for reading the display data from the display data RAM and driving the

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display (page 6, par. [116]). Tamura et al. further teach the driver IC can be used in a portable telephone as shown in Fig. 8 (page 10, par. [207]).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Tamura et al. in combination with the method as taught by McInnis et al. in order to obtain display unit capable of decreasing power consumption and excelling in visibility (page 4, par. [76]).

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu (U.S. Patent No. 6,757,429) in view of Jiang (U.S. Patent No. 6,297,801) and further in view of Spaulding et al. (U.S. Patent Application Publication No. 2004/0202365).

Referring to claim 18, as applied to claim 13, Hu and Jiang teach all the limitations of claim 18 except for manipulating color balance associated with the RGB color format through manipulation of an offset factor applied after the application of a transform matrix to the compressed digital video data.

However, Spaulding et al. teach a method for correcting the color balance of an input digital color image in an input color space, comprising manipulating color balance associated with the RGB color format through manipulation of an offset factor applied (page 3, paragraphs [29] and [30]) after the application of a transform matrix to the compressed digital video data (i.e. after YUV to RGB transformation).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691.

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

H. Nguyen

03/02/2006



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